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The New Zealand Beekeepers' Journal.

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FOR
THE NATIONAL BEE-KEEPERS' ASSOCIATION OF N.Z.

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F. A. Fox

The New Zealand Beekeepers' Journal

The Official Organ of the
National Beekeepers' Association of N.Z.

No. 39 — 5/- Per Annum.

National Beekeepers' Association of New Zealand.

The object of the Association is the improvement of the Beekeeping Industry and furthering the interests and prosperity of the Beekeepers throughout the Dominion. Membership is extended to any Beekeeper who is in accord with the aims and objects of the Association, on payment of a small fee.

If your Journal came addressed in red ink, it indicates your subscription is due for the previous year—perhaps longer.

Look at the address on the wrapper. If in red ink, you are behind with your subscription.

EDITORIAL.

At every Conference the matter of Registration of Apiaries has been brought forward, and it was with very keen pleasure the Editor, in his capacity as Local Inspector, received a number of cards for distribution to those people who kept bees in his district.

There are few who will deny that this is not another distinct step for the advancement of our industry, as it means in a very short time the total elimination of the box-hive man and all he is guilty of. The Editor handed one of the cards to a farmer who had bees on his place, which were very neglected, and practically nobody's cattle, but luckily free from disease. This man said immediately: "If I have to register those bees, I am going to turn the hives upside down, and so goodbye to the apiary, as you call it, and if they are any good to you, you had better clear them out." In four cases this has been the same—the owners don't or won't take any trouble with the

bees, and directly you ask them to register and indicate a possible penalty for not doing so, they are ready to quit the bees to anyone who will take them. We feel sure it will be the same all round, and a very serious menace to our industry in the shape of men who are careless of the bees they own will be lifted, to the benefit of the careful and professional beekeeper.

Another aspect of the matter is the enormous saving of time it will mean to the inspectors, who, instead of going on a kind of wild-goose chase in hunting for people with bees on their land, will now know exactly where to go, how many hives, and how many places he has to visit in the particular district he is in, and will thus be able to map out his programme to the saving of his time and expense to the Department.

* * * *

We desire to congratulate the past and present officers of the National. It is no one particular Executive's work. The matter has been brought forward, placed before the Department of Agriculture, "kept steadily in view" by them; nothing done that year; brought forward again, with the same result; again this year, and at last here it is! This is a matter for congratulating all concerned, as every beekeeper is going to benefit.

We cannot let this matter pass without tendering our sincere thanks to Mr. T. W. Kirk, of the Department of Agriculture. Those who know him best know how keen he is to help the beekeeping industry in any and every possible way, and we feel sure that this matter of Registration of Apiaries (after the noise made about the Registration of Orchards) was no easy thing for him to get put through; but he has managed it, and we are grateful. Thank you, Mr. Kirk; you do so well for us that we must ask the President and Executive to find you something more to do in our way.

* * * *

The Editor last month asked for articles on queen-rearing, and thanks all those who sent them. He would have liked one or two more, but perhaps expects too much. Our friends will notice (and, we think, with pleasure) that we are illustrating one of the articles—that sent by Misses Bernard and Barnes. We think all our readers will agree that the honour of having the first illustrated article to appear in our Journal should be given to the ladies, particularly as the results obtained were so good.

* * * *

We feel sure our readers will appreciate this distinct advance in our Journal, and they will understand it is going to increase the cost, therefore an extra subscriber or two would be welcome. Will you try and get one? Also, would it be out of place just now to ask you if your wrapper was addressed in red ink?

* * * *

There are one or two other little additions in this month's issue which we think will be appreciated by our readers. We refer to the district reports, also the comments by "Critic," which we think were much appreciated. We should like one or two more correspondents in different parts of the Dominion who would be willing to give us little bits of interesting news every month.

The Journal will in future be published on the first of the month; therefore all articles for publication must be in the Editor's hands by the 20th of the previous month, preferably before.

* * * *

Our October number will contain articles by eminent men on "Swarming and Its Control," and is going to be a "hummer." This is just the number that new subscribers will be wanting. Have you got him yet?

ROLL OF HONOUR.

"Our hearts, our hopes, are all with thee,
Our hearts, our hopes, our prayers. our tears;
Our faith triumphant o'er our fears
Are all with thee, are all with thee."
—Longfellow.

B. G. EDWARDS, late of Geraldine. Invalided home.
L. D. CARTER, late of Springfield. Invalided home.
E. A. DENNIS, Glenroy.
W. A. HAWKE, Whitecliffs.
H. SMITH, Woodbury. Killed in action.
W. B. BRAY, Banks Peninsula.
R. N. GIDLEY, Christchurch.
J. SILLIFANT, Christchurch.

THE APPEAL FOR HONEY FOR THE RED CROSS HOSPITAL COMFORTS DEPARTMENT, MANCHESTER STREET, CHRISTCHURCH.

The following donations have been delivered or promised:

Mr. Bowman, Govt. Apiarist	28 lbs.
Mrs. Bowman	28 „
Mr. E. Simpson, Geraldine	48 „
Mr. J. Rentoul, Cheviot (from next season's crop)	112 „
Grand total	216 lbs.

Yes, friends, 216 lbs. is the grand total of the honey that can be raised in Canterbury for the splendid object of giving a little honey to our boys who are wounded! (Canterbury raises over 100 tons in a normal season.) Very, very poor showing, and that after two appeals have been made. Unless some really good response comes between this and the 20th of September, we shall have to shame Canterbury by making this a national appeal, as we cannot possibly write these people that the beekeepers are so apathetic as to let their appeal go by and not take any notice of it.

Now, Canterbury, show us your metal!—Ed.

RETURNED SOLDIER'S APPEAL.

We gladly give prominence to the following letter, which speaks for itself, and hope some of our commercial men may be able to render assistance.—Ed.

65 Warrender Street, Dunedin,
23/7/17.

Sir,—I am a returned soldier, and am desirous of going into beekeeping, and would be glad if you could give me any

information as to the possibility of my getting some instruction at the apiary of any of your members.

Although discharged as unfit for further war service owing to wounds, I am quite able-bodied, and am also handy with carpenter's and other tools.

Thanking you in anticipation,—

Yours, &c.,

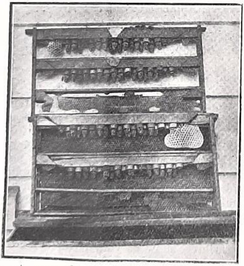
A. R. JONES.

The Secretary N.Z. Beekeepers' Association.

Queen Rearing.

We are forwarding you accompanying photograph to show how far we succeeded last season with the "Latham method" of queen rearing, and of which we read in "Gleanings," 15th July, 1916, page 593.

We put in 72 cell cups, and 60 cells, most of them good ones, were built. We were so pleased with the result we decided to have them photographed the day prior to forming nuclei; but, alas! there's no truer saying than pride goes before a fall, for just as the photographer was about to snap them the two frames collapsed. No one was nonplussed but ourselves, the operator reassuringly saying, "Oh, no harm done; I'll soon get them again."



We cannot remember at this date how many actually emerged, but only about 30 queens proved of use, so small a percentage doubtless being due to the fall.

We formed 40 nuclei with cells, put 18 into the nursery cage, and 2 into queenless colonies. On November 20th we selected one of our strongest colonies, with plenty of nurse bees (there were 11 frames of brood here), and otherwise followed most minutely directions given by Mr. Latham. We fed thick syrup for four days, then thin syrup the remainder of the time, as very little honey was coming in.

The hive containing the mother, queen brood, and bees was in due course placed on its old stand, an excluder put on, and the other box and bees placed above, and in the centre of this storey we placed the nursery cage to be looked after. The queen never went off her lay, and this colony gave us one of the best crops of honey. We intend to breed from this queen next season, and shall **again try the Latham method.**

We were much interested in reading in the May Journal your remarks on the honey method of introducing, and though you suggest that a few experienced beemen should give it a trial, we two women practised it with marked success throughout last season, and recommend it against all methods, and we have tried most. Twice only we had failures, and that was owing to some bungle on our part; even virgins were accepted by Nuclei, and as lately as the beginning of June we introduced with success a laying queen from a nucleus which was being badly robbed into a full colony we knew contained a drone layer, this lady having eluded us many times when wintering down. We did not contract entrance, but merely kept an eye to see no robbing set up; the honey was never thin enough to run out of the hive, and we used plenty of it.

While on the subject of queens, last season we had a very prolific layer, and everything tended to show she could easily do with more than a 10-frame brood nest. We therefore gave her the run of a second box, putting an excluder below the first honey super. This, however, proved far from successful, for she almost deserted the brood chamber, laying only in the box above, leaving the brood combs for the bees to bring up with pollen and a little honey. We were thoroughly disgusted with her, as she had done splendidly before by laying extensively—indeed, far too extensively for our liking—in combs which had been filled with honey and well capped over.

We think for queens such as this that an ideal brood nest would be a half super above the brood chamber. What do you think, Mr. Critic?

Have you found that your breeder queens from which you wish to secure eggs for cell-building invariably prefers laying in a comb from which her bees have removed the freshly stored honey to laying in the prescribed clean comb or one which has been laid in but once or twice? Our breeder absolutely refused the clean comb until her bees had first stored there, and then removed the honey; therefore, in order to save time, we used to place a comb containing a little fresh honey in the centre of the brood nest. We supposed the queen was only following out her natural instinct of having honey surrounding the brood. Is this, then, the usual process?

Misses BERNARD & BARNES, Drury.

[As many of our readers perhaps did not see the article on queen rearing referred to by Misses Bernard and Barnes, we thought it best to reprint it in full, that others may do the same and perhaps better than our good lady friends.—Ed.]

* * * *

EASY QUEEN REARING.

(By Allen Latham.)

Not a few beekeepers fail to renew the queens in their colonies with sufficient frequency because of the difficulty of

getting the queens. They do not feel like buying so many queens, and they do not find it an easy task to rear their own queens.

The various methods in vogue will work in the hands of their originators. When someone else tries a well-advised scheme he runs upon snags. In the end the queens he raises cost as much as or more than queens bought outright.. I have probably tried every plan of queen rearing that has ever come to my notice—some with fair success, others with rank failure. Either I got too small a percentage of queens or else the queens were poor. After years of trial and effort I stumbled upon a method which is giving me more uniform success than any other. It is so simple that it would seem as if anyone could succeed with it, and so economical that even professional queen rearers will probably find it worthy a trial. The objections to be found with the majority of methods of queen rearing is that they give too few queens for the bees employed. It is generally taught that a colony will not rear over a score of good queens at a time. This means the employment of a full colony of bees for some ten days, and only a dozen or score of queens to pay for the expense. If that same colony can be made to turn out 50 to 100 good queens in the same time, it is easy to see that the expense is tremendously lessened. Many a year I have neglected to rear as many queens as I desired, simply because it meant the employment of so many colonies to do the work. Now one colony will give me all the queens I want in one batch.

The photograph shows that the cells, though numerous, are good ones, and never by any methods that I have employed have more uniformly good queens been obtained.

This method in Connecticut can be used any time from April to September, but it gives the very best success during the swarming season. The steps to be followed are these:—

1. Prepare cell cups to the number of queens desired up to 100. Fasten these closely together on slats, crowding them so that 18 or 20 come within a length of 11 inches. This can be done by zigzagging them on a strip one inch wide. Two or even three such strips can be fastened in one frame. Two or even three frames can be prepared.

2. Put small pieces of foundation at the ends of the strips so that the wax bees will have a chance to use up surplus wax, otherwise many cells will be engulfed in comb. Also put in a lower strip of wood with only foundation on it. These strips should be placed about 1¾ inches apart—enough, anyway, to allow the cells to clear the strip below them when they are finished.

3. Select some strong colony in the afternoon, a colony which has a host of nurse bees. Find the queen. Remove her and all the brood. If there are no combs well stocked with pollen and honey, then find such in other colonies. If there are enough bees, leave a few on the combs of brood, and set those combs with bees and queen in a closed hive near by. Now place one comb of honey and pollen in the selected hive, then place in all the prepared frames of cells, and then the other comb of honey and pollen. If it seems desirable, pour some water into the vacant cells of one comb. Put the cover on the hive and leave it till next day.

4. The following day pick out the comb from which the larvæ are to be taken. Best results follow if this selection has been forestalled by putting a sheet of foundation for the breeding queen to lay in, feeding the breeding colony so that there will be a fine lot of larvæ of the right age. Take the ready comb into a warm room which has a moist atmosphere, and where there are no draughts.

5. The royal jelly which must be ready (and this can be obtained by removing the queen from some colony four days before, if one has no other source of supply) is now diluted with distilled water or else saliva. If saliva is used, it is well to rinse the mouth out well so that all foreign substances likely to injure the larvæ will be removed. Dilute to the consistency of heavy cream. By dipping a blunt stick into the jelly, place a small drop into each cell. By this time the distracted colony has worked more or less over every cell cup, and it is ready for a larva.

6. The transferring of larvæ takes time, and there is a danger of the royal jelly glazing over, and the larvæ being seriously injured. One must work with celerity, and much speed will be gained if the most promising portion of the comb containing the young larvæ is cut out and shaved down so that the picking up of an individual larva is made very easy. It is well, in case two frames are to be stocked, to do one and place that in the colony before the other is done.

7. Put the stocked cells into the colony. Feed each night for four days from one pint to one quart of much diluted honey unless there is a honey flow. Do not feed after the fourth day, for by that time every cell is about to be capped, and feeding is useless. There is one exception to this. If there is a great dearth of honey on, it is well to feed enough to keep the bees fat and contented.

8. On the tenth or eleventh day, according to the age of the larvæ you select, all cells must be removed and each given to a nucleus, or cared for, for when those cells are ripe the work may all be lost by the emerging of queens and duelings.

9. Most of the bees of the colony can be used to build nuclei; but if that is not necessary, then replace the frames of brood, young bees and queen which now occupy the hive which ten days or so before was set near by. The colony will go on, and show practically no ill-effects from its task of rearing 100 queens.

From its lengthy description one might be staggered by this plan of rearing queens, but when once tried he will find that the method involves as little labour as any method in use, measured on the basis of the number of queens obtained. Indeed, it involves far less labour than most of the methods. There is no swarm-box nuisance attached to it; there is no need to shut bees up to get them distressed; there is no set time to be followed in regard to the preparation of the colony and the grafting, anywhere from six to twenty-four hours giving good results.

If one needs from fifty to one hundred queens, he will find it very gratifying to get those queens at the expense of but one colony for ten days. And if he has no nuclei to care for the cells and emerging virgins, he can put them immediately into the colonies which are to be re-queened. It is only neces-

sary to remove the old queens three days before the cells are to mature. If this is done at a well-selected time—say, just after the honey flow—little if any loss can follow, because the colonies are without laying queens for some ten days or a fortnight. Also, there is but a small percentage of loss in wedding-flights when virgins fly from full colonies.

I have never tried to see how many good queens can be reared by this method. I have said from fifty to one hundred, but I believe that a powerful colony could easily give two hundred or even more. It would be no task at all for a colony to feed 8,000 worker larvæ for four or five days, and it would not be unfair to assume that the feeding of 300 queens would be equally easy. In my opinion the number is limited rather by the beekeeper's ability to get the cells grafted with sufficient rapidity so that they all may be equally cared for.

One statement more is desirable before closing. It will be observed that the arrangement of frames and cell cups is such that they lie bunched within the midst of a great cluster of bees. Much of the secret of success is in concentration.

—"Gleanings in Bee Culture," 15/7/16.

* * *

In accordance with your request for articles on queen rearing, I submit the following plan, which has at least the advantages of simplicity and procuring a few good queens under very nearly natural conditions with a minimum of trouble.

Take a strong "black" colony for preference, kill or remove the queen, cut out and remove a narrow strip of comb through the thickest of the eggs in a few of the frames, the bees will draw out a number of queen cells along the cut edges of the comb. On the fourth day take a frame of brood containing a quantity of very young larva from your best colony, go to the colony prepared, lift each frame in succession, remove the black larva from the queen cells started, not disturbing the royal jelly more than necessary, and insert a small larva from the comb you have brought from your best colony in place of each one removed. Care must be taken not to injure the larva destined to be a queen in the future. Examine all combs, as queen cells may be started on any of them. On the eleventh day have another look through, count the good queen cells, and prepare two or three frame nucleus for each queen cell, leaving one cell to re-queen the colony. Cut out queen cells, place in cell protectors, and insert between combs in your nuclei. Leave young queens with nuclei until they start to lay. I find that I can usually get from thirty to forty good cells in this way, and anywhere about a dozen by the same method without cutting the combs, or by removing best queen you can get cells without transferring larva.

Note.—If you see a swarm come from a colony that is worth saving queens from, you can get a few good cells by looking through the frames right away and removing all but one good cell.

M. P. MILLETT,
Ardmore, Papakura.

My first method of rearing queens was by removing the queen of one lot and giving a frame of brood from the breeder, taking care that they did not rear any from their own brood, then cutting out the cells and giving them to nuclei. I kept the one lot going at cell-building until they would not rear any more, and went on storing honey, so that I had to give them a queen. Of course, by this time they were all the daughters of the breeder. This way would answer very well for a small number, but is too slow for a larger quantity. I now use the grafting method that has been explained by more able writers than I. I may say that I do not use royal jelly in the cell cups, and if one is in a hurry it is possible to graft in the morning after the bees have been closed up about two hours, and to put the cells out in the nursing hive in the afternoon—say, in about six hours. It saves time if one wants to go off early next day, or it is possible to graft twice with the one lot of bees.

Soneone said at the Conference that it was possible to rear queens for one shilling or two shillings and sixpence. I would not care to take it on at that price. There are cages, candy, postage to pay for, and the time it takes to cage and go to post office to be added on to the cost of rearing. One could supply virgins at that price, as there would be no time lost in waiting for queens to be mated, but it would be a bit of a risk for the purchaser. I must say I believe it pays anyone to rear their own queens. It is then your own fault if you do not get good ones, and it would pay anyone that keeps a large number to pay for someone to rear queens, or at least to give most of their time to it. I do not think anyone could rear queens for sale under 3/6 at the very least, and then it would need to be orders for twelve or more. Good years are all right, but poor seasons add to the cost of breeding.

A. BARRETT, Wainui.

MENTAL MEMOS.

"What are the silvery streaks I see
Slanting across the mulberry tree?
Spirits in tune with the rapture of things,
Bits of June that have taken wings."

[Our bits of June were hailstones. We should read "bites."—Ed.]

"I smile to see the busy bee
A gathering his honey;
But when my nose he counts a rose,
He ceases to be funny."

Yes, we are in for an early spring; the bees have been breeding all the winter through. 'Twill be a booming season. Have you got everything ready?

The men who "do things," and not the men who "merely talk" about things, are the men who bless the world.

After my apiarist had gone, I made 14 lbs. of beeswax out of unconsidered trifles. Have you looked round your apiary?

Our local paper said, "Mr. Bowman, the bee inspector, asks all beekeepers to oil their bees!" Said a friend of mine: "Do you mean to say you have to oil all your bees? I heard you had to clip their wings! What a job it must be!" 'Twas a misprint; It should have read, "Oil your tins."

Have you taken up shares in the H.P.A.? I knew a man who sold 2½ tons of honey, prime clover, to his local grocer at 4½d. per lb. I'm bad at figures, Mr. Editor, but how much more would he have made had he sold it to the HP.A?

W. E. BARKER.

District Reports.

CHEVIOT. (J. Rentoul.)

Cheviot prospects for the ensuing season are increasingly good. The winter has been wet but mild, and clover is coming away splendidly. The weather has just been what was required to produce a complete recovery from the drought conditions of the last three and a-half years. Gums (Eucalyptus globulus) are coming into bloom, and are frequented by the bees on the warmer days. I have been watching the Bailey's Acacia, now in full bloom, and which is extolled in the nurseryman's catalogue as a honey producer. The bees work it freely, and certainly seem to get honey from it.

WAIRARAPA. (H. Benton.)

The rough weather from last month continues. For the six months ending June 30th, 1917, 19.03 inches of rain fell, as compared with 13.06 inches for the same period last year.

Despite the weather all queens have begun laying, and colonies are generally in good condition.

A certain keeper of bees, who has made a failure of beekeeping, remarked that he was done with beekeeping, and intended taking the roofs off his hives and letting the bees fly away. One doesn't need to ask why he failed.

An effort will be made in the near future to establish a branch of the National Beekeepers' Association in the Wairarapa district. There are still a number of large beekeepers to be enrolled. A meeting will be called to discuss the matter.

Mr. W. E. Barker's paper on the "Crystallisation of Honey" is very instructive and interesting. We are in hopes that he will continue his experiments along this line.

30/7/17.

"CANTERBURY TALES."

By E. G. WARD.

When ye Editor asked me to contribute something to the Journal, many excuses arose in my mind, but after considering the matter in many ways, I decided to "do my bit," as to some extent I may claim to be responsible for its production, as I was one of a Committee set up to examine figures submitted by Mr. R. W. Brickell as to the financial soundness of the proposition when the advisability of publishing a Journal in the interests of beekeeping was first mooted by him. This

is the only excuse I can offer, and if any of the readers of the Journal find me dull or uninteresting they have my gracious permission to skip anything with my signature.

I desire to make this page as comprehensive of Canterbury's activities as possible, and with this object in view will be thankful for any news of local interest from anyone outside of Christchurch who will send me such. A few lines on a post-card will be quite sufficient.

I most heartily endorse ye Editor's suggestion that a Roll of Honour of beekeepers be included in the Journal. The very day I read the suggestion I had been thinking of the same thing. A few hours afterwards the Journal arrived. What an illustration of "similarity of thought in great minds!" I am sending along the names of all I know.

I don't feel very hopeful that Mr. Bartlett-Miller's labours in the study of heredity will reap a great reward. One factor which has a great influence on the result must not be lost sight of. I believe that individuality is as potent in the insect world as it is in the human race, and as the drone can never influence the progeny of more than one queen, the "game is hardly worth the candle." Note that the experiment of mating queens in confinement conducted by "Roots" has failed so far. If this had succeeded it would have been encouraging.

The following is in substance a bit of interesting information I read in a local paper some weeks ago:—"A swarm of 5,000 bees will gather 50 lbs. of honey in a year, and will increase to ten times this number." Made me wonder if all the other "items of interest" concerning other pursuits which I am ignorant of are equally reliable.

It would appear from a paragraph which recently appeared in a Christchurch paper that a Rotorua resident had died through eating poisoned honey. I see the botanical name of the plant from which the honey was supposed to have been gathered is Brachyglottis repanda." The name nearly gave me a fit, as many of these botanical names often do when I try to pronounce them; but as to whether the bees ever gathered enough honey from the plant to poison anyone I "ha ma doots."

Why were so many of the "big guns" in beekeeping "conspicuous by their absence" at last Conference, I wonder? Are they so well satisfied with those who are "plugging away" that they are willing to let the willing horse do the work? or are they so busy raking in the shekels that they cannot spare the time? Think it over, gentlemen, before next Conference, and let us see your smiling faces amongst us. It PAYS ALL, both big and little, to attend, to say nothing of the satisfaction one feels after having "done his bit."

The mention of honey reminds me that it is honey we are after. Well, the advice has been offered somewhere, "Don't prophesy unless you know," but I feel much inclined to stake a little on Canterbury's chance of a good crop this season. From accounts I have heard and observation of local conditions, the prospects are better than they have ever been before in my seven years' experience of beekeeping. We have had some good rains, and no severe frosts as yet. Vegetation has been growing all the winter, and spring will soon be with us. I like the outlook.

If the bees are fully employed in "gathering honey all the day," as that famous poem by Dr. Watts tells us they always do, they will have no time to spare in quest of that unnecessary evil, as it appears to me—propolis. This suggests that the following verse might be added to the above-mentioned poem, at anyrate in bad seasons, of which Canterbury has now "enjoyed" three in succession:—

"How doth the little busy bee
Fly out with keen delight
To seek propolis every day,
Then bring things up at night."

COMMENTS ON PASSING BEE EVENTS.

By "CRITIC."

[These Comments, be it understood, are not to be accepted in the light that "Critic" thinks he knows everything about bees, because he knows he does not, and never can. They are simply intended to help in some small way the development of our industry.]

It is now several months since my last "Comments" appeared, and it having been suggested that I should renew them, I have much pleasure in doing so if it will assist the Journal by being acceptable to its readers. I must congratulate our new Editor on accepting the position, and I would bespeak for him every assistance from those who can contribute anything to the columns of his Journal that will be of interest to its readers, and I do hope that no discordant note will be allowed to sully its pages.

Page 625 (July Number), Crystallisation.—I read with very great interest Mr. W. E. Barker's paper on the above, more especially the latter half referring to the crystallisation of honey and his experiments. I notice one or two printer's errors, such as "Yurassic" for Jurassic, and "Dimarphism" for Dimorphism, which would mislead anyone trying to discover the meaning of such words. Now, I am going to have a friendly tilt at Mr. Barker over the "growth" of crystals. It will be remembered that this question came up over what I termed "growth" of a substance in honey which, for the want of a better name, we referred to as "scum," but which I am going to severely "taboo" for the present. It was contended that crystals do not "grow," and Mr. Barker holds this view in his paper. I, on the other hand, still adhere to the opinion I previously expressed—that growth is a proper word to use to denote the expansion of crystals. Mr. Barker's words are:—"Crystals do not grow; they accrete." Now, what is accretion but growth? There are two forms of growth, and my friend appears to have in his mind one form only, though using a word which denotes either one or the other.

There are, as I have said, two distinct systems of growth—one connected with living animals, bioplasm, which expands by assimilating matter in most cases, chemically unlike its own constitution, as in animals and their food up to a certain point, which is termed constructive metabolism, or growth from assimilation. In the case of crystals, they grow or increase in bulk by external addition when immersed in the same material as its own substance. The first is growth by assimilation internally, the other is by incorporation externally. "Growth" of crystals is scientifically correct.

That part of Mr. Barker's paper referring to the exhaustion of steel or iron, where he suggests the state of apparent fatigue of these metals after undergoing a severe strain, should prove interesting to those who like to delve into matters occasionally outside of "shop." Some years ago Professor Jagadis Chunder Bose, of Calcutta, carried out a series of experiments on a bar of iron or steel, the result of which clearly indicated through a delicate instrument (a galvomometer, I think) a dissimilar response when the bar had been subjected to a prolonged strain, and when it had been at rest for a while the diagrammatic records indicated by the instrument on a sheet of paper were very interesting. They could only be characterised as denoting pulsation in the metal. After rest the pulsations were very strong, but when subjected to continuous strain they gradually became weaker, and eventually very feeble, showing sensation in some degree, and therefore indicative of life. He also showed that the metal when at rest responded to poisons, and also to gradual recovery. A familiar experiment of response to over-strain can be carried out by anyone. Wash a tumbler or wine-glass thoroughly clean, also one's fingers, pour a little water into the glass, which will steady it, then rub the fingers, one or more, around the edge, slowly at first, until a musical sound sets up; then increase the movement, when the sound will increase, and eventually the glass will fly apart. Some are inclined by such experiments to believe there is life in all matter. I hope Mr. Barker will continue with his interesting experiments re (I hardly like to mention the word) "scum."

Page 326.—I think the fine of £3 imposed by the Magistrate (Mr. Dyer) for contravention of the Apiaries Act is the highest penalty yet exacted. But the extreme penalty, £5, is ridiculously low. In the New South Wales Act the maximum penalty is £20, and in most of the American Acts it runs as high as £25, and imprisonment. I think our National Association should endeavour to get our maximum up to that of New South Wales—viz., £20, so as to carry more weight as a deterrent.

Page 643 (August Number).—You ask if any reader has had experience of Carniolan bees? Yes, I have, and did not care for them in comparison with Italians. They are of mixed blood, as shown in their markings, some being well furnished with grey hairs, others with slight yellow bands, and others that you could not distinguish from black bees, yet all bred from a pure queen. They breed well, are gentle, but are not such good honey gatherers as Italians. The fact of the difficulty of knowing when you have them pure is against their cultivation.

Pages 646-7.—You are right, Mr. Editor. Mr. Bartlett-Miller is ambitious when he is ready to tackle the study of heredity in connection with bees, especially as he expects, with the aid of collaborators to fix "with certainty what are the heritable characteristics of our bees." If he had commenced the study when he was in his teens and passed it on to his son, and from him on to his grandson, by the time the latter became an old man some little progress might be made. Although August Weisman succeeded in many respects in demolishing some of the old ideas on heredity, there has been

more or less controversy ever since on some of the theories he put forward. There are so many factors which have a direct influence on heredity that make it one of the most difficult scientific problems to solve. The law—if I may use that term—of variation is probably the chief one, then environment plays an important part. The behaviour and variability of chromosomes has, according to some students, considerable influence in heredity.

The most simple method we can follow, as far as we are able, is to breed our queens by artificial selection. We choose on the female side for our breeders those whose bees show the best characteristics, and endeavour to get over the difficulty of the mating with choice drones in the best way we can.

Pages 648-9-50.—Mr. F. C. Baines' article on "The Selling End of the Honey Business," started in the July number, is just what was wanted to clear the atmosphere around the H.P.A., and to bring the result of its formation in the progress of our industry into the clear light of day. I am aware that there were some who, from the want of a better understanding of the actual progress of the Association, were doubtful of any benefit being derived from it. The article in question should clear up all uncertainty in this respect, and Mr. Baines is to be congratulated on giving us so clear and complete a statement.

The Beekeepers' Exchange.

Beekeeping for Beginners.

MONTHLY INSTRUCTIONS.—SEPTEMBER.

[As these Instructions conform to the seasons in the Auckland Districts, an allowance must be made for difference in latitude North and South. Average bee-seasons in the extreme North are four weeks earlier, and in Southland three weeks later.—Ed.]

THE SUPPLY OF FOOD.

I must take it for granted that those who need monthly instructions have accepted my assistance in all good faith that I shall do my best to give them the benefit of what experience I have had.

So far we have had an abnormal amount of rain and adverse bee weather throughout the Dominion. The bees in consequence have had to fall back on their stored supply of food to a much greater extent than usual, with the result that unless the weather changes at once for the better, the stored supply of food is pretty certain to run short, or out altogether. Whether or not, a threatened diminution of food will affect breeding, and this would have a disastrous effect later on. Breeding in any case must not be checked at this time, because we want all the bees we can breed at the opening of the main honey season in the latter part of November.

FEEDING.

In the second examination of the colonies, which should take place early this month, take particular notice whether the supply of food has diminished since the last examination. If it has, feed at once, no matter how much food there may be in the hives, otherwise breeding will slacken.

If the apiary is absolutely clear of disease, combs of honey may be transferred from colonies that can well spare them to others that are short of food; but do not run any risk of spreading disease if it is already in the apiary.

SUGAR SYRUP.

This is the safest food for beginners to give, but it should be made from cane sugar, not beet sugar. At this time of year it is advisable to make the syrup stronger than usual, by adding half a pint of water to each pound and a half instead of a pound of sugar.

FEEDERS.

Manufacturers of bee material supply several kinds of feeders, the "Simplicity" and "Miller" Feeders for feeding above the frames, the "division board" feeder for hanging in the hive, and the "Alexandra" or bottom board feeder. They are all good in their way, and so is the comb feeder which one generally has on hand. Take a completely built out comb, one that has been bred in is the strongest, lay it on an angle in a milk dish or other suitable vessel, then drop the syrup through a perforated tin held 10 or 12 inches above the comb. The force of the falling syrup will drive the air out of the cells and allow the syrup to enter. Hang the combs up to drip, and when ceased put in the hives. Always give the food last thing in the evening; if given in the daytime the bees are likely to become excited and attract robbers.

WEAK COLONIES.

Do not hesitate at this second examination of getting rid of all weak colonies. Unite them with others, as advised last month: they are only a nuisance, and may become a prey to robber bees.

SHELTER.

A well-sheltered apiary is much more profitable than one exposed, and soon pays for attention in this respect. This is the last month for planting, and the best way is to purchase one or two year-old plants rather than sow seed, as so much time is saved. A hedge seven or eight feet high will afford good shelter for a large apiary. Any nurseryman will advise as to the best and quickest growing evergreen plants to put in, but get shelter anyway.

DAMPNESS WITHIN THE HIVES.

It is quite possible that some of the combs at the sides of hives after all the wet we have had may get mildewed more or less. Remove any that are found, and hang them in the workshop or some place where there is a fire. When well dried the mildew can be removed with a soft brush.

Keep a lookout for disease, and get everything into order for the coming season.

BEES.

STRAY BEES.

By R. B., Bay of Plenty.

[The Editor offers an apology to our friend "R. B." for the erratic manner in which the articles from his pen have appeared lately, mainly due to the change of Editors, but we think there will be no cause for complaint in the future.]

(Continued from July issue.)

On our desk is a letter from the managing director of the Association, in which he says: "We raise no objection to our shareholders selling to their private customers, but we must stick together in our dealings with the wholesale trade." That seems to be the answer in a nutshell, and shows that in exceptional cases, where the beekeeper has old customers living near who cannot, owing to distance, purchase from the Association, he is justified in supplying direct to them for their own private use, provided he has first supplied the amount guaranteed to the Association. On the other hand, the Articles of the Association provide fitting penalty for the shareholder who enters into competition or undersells the Association outside his own immediate locality. This is only fair, for no Company could be successfully run if its own shareholders were allowed to compete against it in business. The Articles of the Association are broad and liberal enough to suit most beekeepers, without being so lax as to render the Company an easy prey to those merchants and middlemen who would like to see it fail, so that they could buy honey at their own price again.

Why is it that it is so often remarked that there is a greater proportion of non-drinking men among beekeepers than among other farming professions? Perhaps the following extract from the "Australasian Beekeeper," which was copied from Freeman's "Journal," will throw some light on the subject. "Facts already brought to light show that an intoxicated person is quickly sobered by a bee's sting, and that drinking men who take up work among bees, where they are frequently stung, soon lose their old craving for alcohol."

* * * *

Any beekeeper who should visit Rotorua during the off-season should not miss the opportunity of seeing the State Nursery and plantations at Whakarewarewa, two miles out of town. The lover of useful and beautiful things could wander round here for days, admiring plants all the way, from clovers to the stately eucalyptus, which bear in their season a wealth of honey-laden bloom. It seems only a few years since the seedling plants were placed out on these steep hills, and now they are ready to be cut for telegraph poles. The visitor will find the officials to be enthusiasts in connection with plants and trees, and no matter whether it is the manager or the foreman in charge of the planters, they are all anxious and willing to impart knowledge, and to give answers to questions (wise and otherwise) in regard to plants under trial and those fit for practical purposes. Seedling plants of eucalyptus and pines are supplied to those who undertake to plant and attend to them at 3/- per 100 for wrenched plants, and 6/- for mossed, delivered to railway station or post office, freight and postage extra. Full instructions, lists, &c., may be had by applying to the Superintendent State Nursery, Whakarewarewa.

* * * *

Those who have sons, brothers, or fathers away at the Great War will be pleased to see that the Beekeepers' Conference, at its annual meeting, passed a resolution in favour of pruning off some of the power vested in the liquor trade. In these strenuous times the best efforts of every man and woman, both mentally and physically, is urgently required, no matter whether they are engaged at the front or working way back in New Zealand producing essential food and clothing to help win the war. One of the saddest sights that can be seen is the picture presented nearly everywhere of our brave returned soldiers being supplied with liquor in exchange for their hard-earned money before they have recovered from shell-shock and are able to take care of themselves. "One man's dire calamity is the other fellow's opportunity" seems still to be the ruling motto of the age, but we are very pleased to see and know that beekeepers stand on a higher plane.

* * * *

An American Bee Journal says:—"We are reliably informed that the British Government has been on the market for 5,000 barrels of extracted honey, and the Russian Government for 3,000 barrels more." This is over 2,000 tons, or about twice as much as New Zealand produces in a year. We wonder if those supposed to look after the interests of New Zealand honey producers will take advantage of this information, and use it as a means to advance the price of honey

in proportion to the advance made by other foods. While beekeepers are often supposed to be in business more for pleasure than profit, a little money to pay the extra big rise in tinware, foundation, wire, iron, &c., would not come amiss.

* * * *

What naughty chaps those apiary inspectors must be. The late Editor is afraid (p. 592) that now they are supplied with five-seater motor-cars instead of two-seaters, they will be tempted to use them for the benefit of their friends on week-ends. Those who know the sedate and correct inspectors can scarcely imagine them out for joy-rides with a car-load of girls. We have never seen the late Editor, but we wonder—we just wonder why he is so suspicious! All other Government Departments whose officers use motor-cars are supplied with five-seaters, so why should the apiary industry be treated differently?

* * * *

Cards for application for registration have been posted to all beekeepers in this district with one or more hives, together with a copy of the Gazette notice showing that registration is free, but non-registration entails a possible fine of £5 and costs.

* * * *

When queen-excluders are incorrectly used, they are no doubt honey excluders as well as queen-excluders, and we think some of those advocating the use of excluders have not been quite candid in telling all the little details about working them. To produce honey that has not had grubs mixed up with it is well worth while, for we can all relish an article that has always been clean. For the last two seasons we have tried out the use of excluders on four 12-frame hives. Early in the season, when the bees begin bringing in honey from the first clover, and just when the ordinary entrance requires enlarging, we place wedges between the first super and the queen-excluder, raising the front end three-eighths of an inch. A small alighting board about four inches wide is also an advantage, as it not only helps the bees during the summer, but when it is taken away in the autumn the bees drop down to the old entrance without much trouble.

* * * *

If we lived in a district with a large population we would advertise our honey as "guaranteed to have been produced above queen excluders, and extracted by machinery without being touched by the hands." Our pure food laws should provide that a guarantee such as this should accompany all honey offered for sale.

14th August, 1917.

ANSWERS TO CORRESPONDENTS.

W. H. K.—The original article advocated diluted honey, but the Editor prefers all honey, and plenty of it. See the article on this by Misses Bernard and Barnes in this issue.

F.B., Roxburgh.—Your subscription to the National would be 5/- a year. Bee supplies can be obtained through the H.P.A. if you are a shareholder.

D. C., Mataura.—The good winter is responsible for the fine state of your hives. Pleased you like the Journal, and I

promise not to spill any more red ink on your wrapper for some time now.

"Lonely."—Sorry, dare not do it; am not sure the lady is single; the President might think I am going to run a matrimonial column. I would like to help you, but—I "dussent."

Correspondence.

THE CHALLENGE.

(TO THE EDITOR.)

Sir,—In your July number, page 631, you issue a challenge (though there appears to be nothing at stake) to the effect that no such order as 50 tons of honey from one firm in England or elsewhere was ever previously received by a New Zealand beekeeper to that received by the H.P.A. Well, Mr. Editor, I accept your challenge, and can prove you have lost, although I can quite understand how you fell into error. In either 1890 or 1891 the head of a large English firm came to New Zealand to settle up the estate of his brother who died in the Hamilton Hospital. I had transacted business for the latter, who had kept bees near Te Aroha, and I had also sent the firm honey on several occasions. During the stay in Auckland of the head of the firm a contract was made between us to the effect that the firm would take all the first-grade honey I could send them for the period of five years, at a stipulated price of 5d. per lb., in 60-lb. tins, f.o.b. at Auckland. Arrangements were made with my bankers, the N.B.N.Z., to draw upon the firm for the full amount on presentation of my shipping notes. I made out the contract myself, a copy of which I still have by me, and which was duly signed and stamped. When we were arranging matters, I asked what was to be the limit I should send. The reply was, "No limit; 50 or 100 tons, or more; it would not matter so long as it was first-grade honey." I think Mr. Cotterell can bear out my statement. Unfortunately, owing to the ravages of foul-brood, the production of all grades of honey fell off, so that after the first three or four years I could send no more, and even at the best I could only send a few tons each season; but the fact remains that you have lost on your challenge—so shake!—I am, &c.,

I. HOPKINS.

[I willingly shake with you, friend Hopkins; we youngsters are a bit too cocksure at times; but I am just going to say this: I feel if you had the organisation to back you up, you could have filled that contract, to the lasting benefit of the industry.—Ed.]

(TO THE EDITOR.)

Sir,—I read in the Journal an article by Mr. Baines on selling honey, in which he states very fully what the H.P.A. has done to increase the price of honey for the producers. I for one am more than satisfied with what they have done so

far, but I am very anxious to know what they intend doing for the Otago shareholders for the coming season. I understand we are expected to sell all our honey through the H.P.A. If we do that, are they prepared to supply our customers who have bought our honey for years? To do this they require to make Dunedin a distributing centre for Otago. It is time now that we should be preparing tins or something to put our honey in. Last year I ordered and got 30 dozen 10-lb. tins and 18 60-lb. tins, and had the most of them filled when a representative of the H.P.A. came round wanting us to take shares and export the most of our honey through the H.P.A.; but how could we when our honey was in 10-lb. tins? and I believe this is why the H.P.A. got such poor support in Southland; so I hope the management of the H.P.A. will get to business in good time this year, and get the support of all the beekeepers in the land. I think the co-operative system the best for the bee business if it is managed right. We have a good market for our export honey, and that is what will keep our local prices right. What would our dairy industry be if it was not for our export trade? It is just the same with our honey, so I hope the beekeepers will support the H.P.A. and make it what it should be.—I am, &c.,

JAMES McLAY.

Katea, 7th August, 1917.

(TO THE EDITOR.)

Sir,—Thank you very much for the August number. I have just read it from cover to cover. I enjoyed a hearty laugh over friend Nelson's experiences, and, knowing the man, I am looking forward for some more. Friend Bartlett-Miller's article in this and friend Barker's in the previous issue are too far up in the clouds for me; but I read them carefully, hoping it might not yet be too late for me to assimilate a little of their knowledge. I am not on for the wheelbarrow job, however. I don't know whether it is a peculiarity with me (I rather think not), but I enjoyed the little vein of the milk of human kindness running through the Journal, and it even made that H.P.A. struggle for the milk bucket seem more natural and more worth while. By the way, that advt. should be sent to that beeman at Waikaia who sends his honey to an auction mart in Auckland! I don't like forming an opinion from one article, but anyway "Bees" has made a good beginning, and beginners in beekeeping should appreciate his column. That we have a good thing in having established our Journal is an acknowledged fact. To me it is also a good thing to know that in its frequent change in editorship it has kept up its high standard and that there is such a good prospect before it for the future.—I am, &c.,

JAMES ALLAN.

[That Southerner is now a shareholder.—Ed.]

Wairarapa Beekeepers.—Please note that Mr. H. Benton is calling a meeting of all beekeepers in the district at Featherston on SATURDAY, September 15th, at 10.30 a.m., to consider forming a branch of the National for the district, and all beemen are requested to attend.

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